

WOULD SOLO DINERS BE DIFFERENT?
THE RELATIONSHIP AMONG PERCEIVED
QUALITY OF RESTAURANT ATTRIBUTES,
SATISFACTION, AND RETURN PATRONAGE
INTENTIONS

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Abstract: Solo dining is on the rise. Not only is there a surge of single-person households, changes in lifestyles, and busy schedules, which are attributed to the increase of solo diners, but the act of dining out per se has become one of America's most popular pastimes as much as attending a sporting event or a show. Thus, solo diners are typically taking every opportunity to visit restaurants—from an upscale independent restaurant to a casual fast-food chain—to experience delicious food. Nonetheless, the segment of solo diners has been neglected in the literature and in practice in spite of the emphasis placed on excellent service quality and customer satisfaction as a means to attract people to return to an establishment.

In an attempt to fill in the gaps left by previous studies, the current study examines the interrelationship among solo diners' perceived quality of restaurant attributes, satisfaction, and return patronage intentions. A web-based survey was conducted to collect data from solo diners in the United States. Results of the study indicate that perceived quality of the food, service, and physical environment attributes positively affected satisfaction and return patronage intentions. The results also showed that satisfaction had a positive influence on return visits. Finally, the mediating role of satisfaction among the three perceived qualities of food, service, and physical environment attributes and return patronage intentions are found to be effective.

The conceptual model of the current study provided new knowledge for understanding the important yet under-researched segment of solo diners in the hospitality industry. Findings of this study also offered insights into managerial decisions regarding food quality improvement, employee training, and optimal deployment of physical environment attributes.

Keywords: solo diners; perceived quality of restaurant attributes; customer satisfaction, return patronage intentions

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CHAPTER I

INTRODUCTION

As with many other industries, the hospitality industry is under increasing pressure to meet the sophisticated needs of customers and to earn their return patronage. Especially when confronted with today's fierce market competition, restaurateurs have been attuned to the external forces and trends (e.g., governmental laws and regulations, health and safety concerns, energy and environmental issues, etc.), which create promising opportunities to gain a competitive advantage and win more customers (Olsen, Tse, & West, 2008). Successful firms make themselves aware of the distinct problems and needs of their target customers by using extensive market research and accurate data analysis. Through that understanding, the successful business is better able to satisfy its customers and expect return patronage. In other words, each customer has different needs and preferences, and it is unlikely that the same offering is viewed as optimal by all customers. If a firm does not understand its customers' expectations, the firm is likely to lose its customers to another firm that better caters to customers' needs (Shoemaker, Lewis, & Yesawich, 2007).

Researchers in the hospitality industry conducted extensive research to investigate what causes customers to return to a restaurant for another meal and attempted to understand how restaurant features or attributes impact customers' decision to patronize a

restaurant. It is commonly agreed that satisfaction has been considered a fundamental determinant that directly induces a customer's intention to repurchase a certain product or service (Oh, 2000; Oliver, 1980; Yi, 1990).

Although it is acknowledged that satisfaction does not always guarantee repurchase, there is a high chance that dissatisfied customers will not return or will spread negative word-of-mouth (Gilbert, Veloutsou, Goode, & Moutinho, 2004). Fierman (1994) argues that retaining an old customer costs three to five times less than attracting a new customer. Moreover, a 5% decrease in customer defection can lead to an increase of up to 25% in restaurant profits (Wallace, 1995). Therefore, it is essential that hospitality professionals ensure customer satisfaction so that customers return and sales and profits grow (Dubé, Renaghan, & Miller, 1994).

In addition to customer satisfaction, food, service, physical environment, and the cost/value of the meal were all found to be important factors that contribute to customers' return patronage intentions (Gupta, McLaughlin, & Gomez, 2007; Mattila, 2001; Pettijohn, Pettijohn, & Luke, 1997; Ryu & Jang, 2007; Ryu & Han, 2010; Ryu, Han, & Kim, 2008; Soriano, 2002; Susskind & Chan, 2000). Furthermore, several researchers proposed a model that explains the relationship among attribute performance, customer satisfaction, and repeat patronage behaviors for restaurants (Parasuraman, Zeithaml, & Berry, 1988; Stevens, Knutson, & Patton, 1995). It was found that service quality is positively correlated with and acts as an antecedent of customers' satisfaction and future repurchase intentions (Jang & Namkung, 2009; Namkung & Jang, 2008; Qin & Prybutok, 2009). The findings of the aforementioned studies are meaningful because one can determine which service attributes are important in inducing customer satisfaction and

retention. However, the focus of the previous studies was only limited to general restaurant customers, leaving unexamined the niche market of solo diners, which is exhibiting steady growth in numbers.

Busy schedules and more time spent away from home have led many Americans to eat meals by themselves (Jargon, 2014; Muhammad, 2012). In fact, it is reported that nearly 50% of all eating and beverage consumption can be attributed to solo diners. People have breakfast on their own 60% of the time and eat lunch solo 55% of the time (Jargon, 2014; NPD Group, 2014). The rise of single-person households is another driving force that explains the increase in the numbers of solo diners (Jargon, 2014). Driven by changes in lifestyles and social structures—late marriage, increasing divorce rates, and widowed baby boomers—single-person households have been rapidly expanding and are predicted to comprise 20% of the world population by 2030 (Euromonitor, 2014). With an increasing number of consumers spending time alone, activities that were traditionally enjoyed with family members or friends, such as going to movies or going on vacation, have been more carried out solo, including dining out in a restaurant (Goodwin & Lockshin, 1992).

Increasing numbers of single-person households and solo diners have turned into worldwide trends. Western Europe took first place with single-person households by region, followed by North America, Eastern Europe, Australasia, Asia Pacific, Middle East and Africa, and Latin America in 2013 (Euromonitor, 2014). Euromonitor (2014) even projected that, between 2014 and 2030, single-person households are expected to be the fastest-growing household profile globally. In the United States, the number of single-

person households is estimated to be 38 million or 27% of all households, the highest level in U.S. history (NPD Group, 2015).

Not only is the size of this demographic large, the purchasing power of single-person households is considerable. Because they spend more discretionary dollars, especially investing in their own well-being, single-person households have become a profitable market for many businesses (Klinenberg, 2012). For instance, American single consumers spent \$1.9 trillion in 2010, which is equivalent to an annual expenditure per person of \$34,471. By contrast, married couples without children and families with children in the highest-spending segments spent \$28,017 and \$23,179 per capita, respectively (Stanton, 2013).

To date, however, solo diners have not received worthy attention in the hospitality literature in spite of their importance as a growing market segment and their wide-ranging influence on the food and beverage business (e.g., new product/menu development, packaging, seating design, etc.). It has been suggested that individuals who dine alone have different preferences in dining experiences, but there has been a scarcity of studies investigating perceptions and behaviors of solo diners, particularly how restaurant performance on the attribute level affects their satisfaction and return intentions (Jargon, 2014; Muhammad, 2012; Stanton, 2013).

Purpose of the Study

The purpose of the current study is to fill the gaps in the existing research by examining how solo diners' satisfaction and return patronage intentions are affected by their perception of restaurant attributes quality. Also, this study aims to explore the unique needs of solo diners in their dining experience as a solo guest.

Research Questions

This study aims to answer the following questions about solo diners:

1. What are the restaurant attributes that have the most impact on solo diners' satisfaction?
2. What restaurant attributes would be strongly associated with solo diners' return patronage intentions?
3. What is the relationship like among solo diners' perceived quality of restaurant attributes, satisfaction, and return patronage intentions?

Significance of the Study

Theoretical Contributions

In the restaurant environment, the roles of product and service quality have been proven to be an important antecedent of customer satisfaction and repurchase intentions (Gupta, McLaughlin, & Gomez, 2007; Mattila, 2001; Pettijohn, Pettijohn, & Luke, 1997; Ryu & Jang, 2007; Ryu & Han, 2010; Ryu, Han, & Kim, 2008; Soriano, 2002; Susskind & Chan, 2000). In other words, identifying what customers want and allocating the right

resources accordingly to fulfill the identified customer needs are the keys to every successful business. However, to date not many studies have been conducted to explore the perceptions of solo diners on restaurant attributes quality. The market size of solo diners is growing, and solo diner purchasing power is influential, given the rise of less-price sensitive, convenience seeking, and health-conscious single consumers (Bouhlel, Mzoughi, & Chaieb, 2011; Klinenberg, 2012; NPD Group, 2015; Stanton, 2013). This study provides new and important knowledge by identifying what restaurant attributes are particularly crucial to inducing high satisfaction and high return patronage intentions in solo diners. Moreover, additional empirical evidence is gathered regarding the effect of solo diners' satisfaction on intentions to revisit the restaurant.

Practical Contributions

As ways to improve and create market opportunities, marketing officers need to understand their different customer bases (Armstrong, Adam, Denize, & Kotler, 2014). This study offers restaurant practitioners insights into the preferences of an emerging customer segment. Restaurant managers can delve more into single diner customers' tastes and preferences regarding restaurant attributes. This will further help managers to identify potential issues with their products and services, which can, in turn, help to reduce the possibilities of lower satisfaction and repurchase intentions. Furthermore, restaurant operators can control marketing costs by knowing what restaurant attributes matter the most to their solo customers and by appropriately employing marketing tools and media.

Organization of the Study

This study consists of five chapters. Chapter I describes the background, purposes, and significance of the study. Chapter II reviews the literature on restaurant attributes to measure customers' perceptions of restaurant performance, customer satisfaction, and return patronage intentions. With the constructs suggested in the study, the author proposes and tests the study hypotheses. Chapter III provides an explanation of the research methods and procedures applied in this study. This includes research design, participant selection, data collection procedure, and data analysis techniques. In Chapter IV, the results of the study, including the descriptive information of the samples and hypotheses testing, are discussed. Chapter V presents conclusions of the study, its theoretical and practical implications, its limitations, and suggestions for future studies.

CHAPTER II

REVIEW OF LITERATURE

Active lifestyles, time constraints, and rapid demographic shifts toward one-person households have fueled the trend of solo dining. It is also true that, in the current hyper-connected world, more people find solitary dining an inspiring experience that allows for a moment to disconnect. Obviously, eating alone is no longer an occasional exercise. Rather, it has become a fact of life. Thus, restaurant managers should pay more attention to solo diners as a different segment from non-solo diners if they want to succeed in business because different customer party size may involve different sets of customer needs.

This chapter examines the attributes that affect the solo diners' decision to return to a restaurant for another purchase, which leads to satisfaction, and the interrelationship among the study variables.

Effects of Perceived Quality of Restaurant Attributes on Customer Satisfaction and Return Patronage Intentions

The primary goal of most businesses is undeniably to maximize profits, and it is commonly understood that frequent returns to a business can yield higher sales and profitability. In this light, academicians and practitioners in the hospitality industry have long researched factors that influence a customer to patronize a firm and have argued that high quality of product attributes and high customer satisfaction are key

drivers of a firm's financial success (Anderso & Fornell, 1994; Eklöf, Hackl, & Westlund, 1999; Ittner & Larcker, 1998).

Previous studies show that performance of restaurant attributes has a positive effect on customer satisfaction and return patronage intentions (Bitner & Hubbert, 1994; Bolton & Drew, 1994; Oh & Parks, 1997; Zeithaml, Berry, & Parasuraman, 1996). The findings of these studies revealed that the higher the level of restaurant attributes performance a customer perceives, the higher satisfaction he or she tends to attain and the more likely he or she is to return to the restaurant for another meal (Bitner & Hubbert, 1994; Bolton & Drew, 1994; Oh & Parks, 1997; Zeithaml, Berry, & Parasuraman, 1996). As a result, service firms have striven to track customer satisfaction by measuring the perceived quality of restaurant attributes. According to existing literature, generally three dimensions of restaurant attributes were used to assess the quality of restaurant attributes: food quality, service quality, and physical environment quality (Bellizzi & Hite, 1992; Clark & Wood, 1998; Dubé, Renaghan, & Miller, 1994; Fu & Parks, 2001; Knutson, 1988; Namgung & Jang, 2008; Nicholls, Roslow, & Tsalikis, 1995; Parasuraman, Zeithamal, & Berry, 1988; Ryu & Jang, 2007; Susskind & Chan, 2000; Wakefield & Blodgett, 1996). Each attribute is explained in more detail on the following pages.

Food Quality

Research shows that, regardless of the type of restaurant segment (i.e., full-service, limited-service, quick-service, fast casual, etc.), food quality is the most influential attribute for predicting a customer's likelihood of returning to a business (Dubé, Renaghan, & Miller, 1994; Fu & Parks, 2001; Clark & Wood, 1998). For example, Dubé, Renaghan, and Miller (1994) asked customers to rate the relative importance of restaurant attributes in an independent upscale restaurant. Their survey

results showed that food quality ranked at the top and above all other attributes, such as service quality and ambience. More specifically, fresh ingredients, various menu options, good presentation of food, innovative food items, and food consistency in terms of taste, presentation, and portion are the reasons for clientele to return for another meal (Dubé et al., 1994). Because food is a restaurant's core product, it is contended that solo diners expect the same high-quality food as do non-solo diners.

In the study by Gupta, McLaughlin, and Gomez (2007), the temperature of the food and cooking style as requested were added to measure food quality along with food tastiness and presentation of food. Availability of nutritious food options is also a crucial element for shaping customers' assessments of the quality of food attributes (Sulek & Hensley, 2004).

According to Johns and Tyas (1996), as more modern consumers have become health conscious, healthy food can significantly affect the customers' evaluations of the dining experience. Sulek and Hensley (2004) also support the importance of dietary acceptability; specifically, food nutritional value (e.g., how much fat, carbohydrates, or vegetables a menu item contains) plays an important role in food quality. Lastly, food safety (proper storage, sufficient cooking time, and absence of foreign material) has long been one of the primary factors shaping customers' perceptions of food quality (Sulek & Hensley, 2004). According to the literature, the following hypotheses are set forth:

H1-a: Perceived food quality will positively affect solo diners' satisfaction.

H1-b: Perceived food quality will positively affect solo diners' return patronage intentions.

Service Quality

In the service industry, employees play a significant role in influencing customers' experiences. Unlike in the manufacturing industry, most of the time the production and consumption of the service occurs virtually simultaneously, while both customers and service providers are present in a service establishment (Walker, 2013). Thus, such components as service providers' courtesy, attentiveness, knowledge about products, accuracy, and promptness are all critical in determining customers' satisfaction with the service industry (Knutson, 1988; Nicholls, Roslow, & Tsalikis, 1995; Parasuraman, Zeithamal, & Berry, 1988).

Furthermore, certain attributes are especially important, depending on the sector in which the restaurant is located. For example, Cheng (2005) examined customer satisfaction in fast-food restaurants and found that waiting time before food arrival is the most important attribute, while Sulek and Hensley (2004) indicated that food quality is the most critical factor in full-service restaurants. In the fast-casual restaurant sector, willingness to help, delivery of promised service, and competency/knowledge of staff about products were found to be the essential attributes influencing customer satisfaction (Namkung & Jang, 2008).

Sulek and Hensley (2004) explain that the fairness of the seating order and interpersonal skills of restaurant servers affect customer satisfaction. Fairness of the seating order indicates adherence to the idea of first-come, first-served, and interpersonal skills of the server means politeness, helpfulness, and friendliness of the employees. Solo diners often receive inferior service because some restaurant operators assume that solo diners generate smaller checks (Clement, 2015). Thus, solo diners often end up being seated at corners or near restrooms after long waits, while people behind them in line are seated ahead of them (Grant, 2015). What is worse,

solo diners report that some restaurant employees give them pity looks rather than warm greets due to the stigma surrounding dining alone (Little, 2014). Hence, warm greetings, empathetic response, and availability of online reservations as a way to alleviate the embarrassment of asking a table for one are considered to be some of the service elements solo diners desire (Balfour, 2014). Consequently, the following hypotheses are set forth:

H2-a: Perceived service quality will positively affect solo diners' satisfaction.

H2-b: Perceived service quality will positively affect solo diners' return patronage intentions.

Physical Environment Quality

Various academic disciplines such as psychology, architecture, retailing, and marketing have given attention to the influence of physical environment on individuals' emotional responses and subsequent behavioral intentions (Donovan & Rossiter, 1982; Mehrabian & Russell, 1974; Russell & Pratt, 1980; Ryu & Jang, 2007; Turley & Milliman, 2000; Wakefield & Blodgett, 1999). According to Mehrabian and Russell (1974), individuals exhibit either an approach or avoidance response under certain surrounding environmental stimuli. To explain, "approach" refers to the desire to stay, explore, and return to the environment in the future. On the other hand, "avoidance" indicates the state where one does not want to spend time in the relevant place. Russell and Pratt's study (1980) supports the former notion and indicates that the degree of pleasure or arousal in hedonic service consumption could determine the level of satisfaction.

Restaurant literature shows that various aspects of physical environmental attributes can influence customer satisfaction by acting as tangible cues shaping the

customer's evaluation of the restaurant's quality (Namgung & Jang, 2008; Ryu & Jang, 2007; Susskind & Chan, 2000). Specifically, the interior design of a restaurant may affect the duration of a customer's stay (Wakefield & Blodgett, 1996) because color stimulates strong emotional responses (Bellizzi & Hite, 1992), and music conveys a positive auditory cue for drawing customer attention and stimulating emotions (Dubé et al., 1995; Matilla & Wirtz, 2001; Milliman, 1986).

Ryu and Jang (2007) empirically tested the effect of environmental perceptions on behavioral intentions through emotional responses in upscale restaurants. Their study was meaningful in that it investigated the combined effects of the physical environment on customer satisfaction as opposed to separating the various elements of physical stimuli, such as music or lighting (Ryu & Jang, 2007). The study's findings demonstrate that positive ambient conditions, spatial layout, facility aesthetics, seating comfort, lighting, décor, and cleanliness of a restaurant can cause favorable emotions and subsequently stimulate the desired approach behavior, which can lead to repeat patronage behavior. For solo diners, the layout of a restaurant can be especially relevant in determining the level of satisfaction and return patronage intentions. It is said that seating-style preferences vary from bar seating, communal table, to a quiet out-of-the-way table, depending on the solo diner's willingness to be engaged in social interaction (Balfour, 2014). Accordingly, the following hypotheses are developed:

H3-a: Perceived physical environment quality will positively affect solo diners' satisfaction.

H3-b: Perceived physical environment quality will positively affect solo diners' return patronage intentions.

Customer Satisfaction and Return Patronage

Customer satisfaction is defined as “the consumer’s fulfillment response. It is a judgment that a product or service features, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels of under- or over-fulfillment” (Oliver, 1997, p.13).

As one of the most crucial antecedents of return patronage intentions, customer satisfaction has had a great deal of attention due to its important role of retaining loyal customers. In the era of increased competition, customers have complete freedom to make choices over various options, and only truly satisfied consumers are expected to remain loyal to a firm, which further guarantees a firm’s long-term success (Jones & Sasser, 1995). To illustrate, loyal customers tend to spend more, buy more frequently, and spread positive word of mouth (Dick & Basu, 1994; Bolton, 1998); at the same time, they are less likely to be sensitive to price elasticity or competitors’ promotions (Anderso & Fornell, 1994; Eklöf, Hackl, & Westlund, 1999; Ittner & Larcker, 1998). In fact, research has shown that mature and highly competitive service industries such as hotels, restaurants, and airlines gain more financial profitability by retaining their customers (Fornell & Wernerfelt, 1987; Reichheld & Sasser, 1990). For example, in the study of Reichheld and Schefter (2000), a 5% increase in customer retention resulted in a 25% to 95% increase in profits.

Previous research shows that consumers view satisfaction differently. One is transaction-specific satisfaction; the other is overall satisfaction (Jones & Suh, 2000). Transaction-specific satisfaction involves a discrete service encounter that results in a consumer’s satisfaction or dissatisfaction. For example, a specific action acted by a server at a restaurant and the feelings of a customer toward the very action can be

regarded as a transaction-specific satisfaction. On the contrary, overall satisfaction refers to a consumer's experiences with a particular firm that involves general satisfaction or dissatisfaction (Bitner & Hubbert, 1994). In other words, customers' overall satisfaction indicates how well customers like their consumption experience and is an indication of customers' willingness to repurchase the product or service if they need another purchase in the same category (Johnson, Anderson, & Fornell, 1995). The global impressions patrons have on a restaurant during a meal can be an example of overall satisfaction.

In this study, overall satisfaction was measured as a predictor of repurchase intentions adopting the position that overall satisfaction is a better measurement of repurchase intentions compared with transaction-specific satisfaction. It is argued that consumers are still retained even they experience less than acceptable service if their overall satisfaction is high (Hoffman, Kelly, & Rotalsky, 1995). In other words, consumers may give a service provider a second chance in the presence of less than fully satisfactory service encounter when their global evaluation of the service experience is high.

The adoption of overall satisfaction is more likely to be relevant to solo diners because solo diners might exhibit different preferences toward restaurant attributes as opposed to non-solo diners. In other words, solo diners may compromise or pursue certain quality aspects because of their self-conscious status of being alone. For example, even if a solo guest is not entirely satisfied with the food attributes in a restaurant, servers knowing how to interact with solo diners will play a major role in increasing the customer's overall satisfaction. Adequately reading the guest to see whether he or she prefers to be on the chattier side or wants to be left alone and

providing a couple of table location choices may help the solo customer to be on less display.

A positive association between customer satisfaction and future patronage intention has been validated by many studies (Anderson & Sullivan, 1993; Cheng, 2005; Soderlund & Ohman, 2005; Sulek & Hensley, 2004). For example, Getty and Thompson (1994) investigated the relationships among service quality, customer satisfaction, and willingness to recommend a product or service in the context of the lodging industry. The study findings indicate that satisfied customers are more likely to exhibit strong intentions to repurchase and to recommend the product or service to other people.

In the restaurant literature, Ryu and Jang (2007) examined the essential role of customer satisfaction in increasing the intent to return for another meal and the likelihood of sharing a positive recommendation with others in an upscale restaurant. Likewise, in the investigation of relationships among the overall fast-casual restaurant image, perceived value, customer satisfaction, and behavioral intentions, Ryu, Han, and Kim (2008) showed that satisfaction was a significant predictor of customers' behavioral intentions.

According to Ajzen and Fishbein (1980), most human behaviors can be predicted based on intention because such behaviors are voluntary and under the control of intention. Thus, satisfied customers will be more likely to revisit the restaurant and make a purchase, which may engender more sales for the company. Consequently, the following hypothesis was developed:

H4: Solo diners' satisfaction will positively affect their return patronage intentions.

Mediating Role of Customer Satisfaction Between Perceived Quality of Restaurant Attributes and Return Patronage Intentions

The mediating role of customer satisfaction between perceived service quality and post-purchase behavior has been examined by several researchers yet remains debatable (Bansal & Taylor, 1997; Cronin & Taylor, 1992; Dabholkar, Shepherd, & Thorpe, 2000; Qin & Prybutok, 2009). For instance, Namkung and Jang (2007) found that customer satisfaction played a mediating role between food quality and behavioral intentions. Cronin and Taylor (1992) also found that perceived service quality had a significant positive effect on customer satisfaction, and that satisfaction, in turn, led to repurchase intentions. In contrast, Qin and Prybutok (2009) examined that customer satisfaction did not mediate the relationship between service quality and behavioral intentions.

Meanwhile, there has been scant research assessing the interrelationship among perceived quality performance in the attributes level, customer satisfaction, and return patronage intentions. Ryu et al. (2007) have examined the relationships among restaurant image, perceived value, customer satisfaction, and behavioral intentions. However, the mediation effect of satisfaction was not addressed in the study. The study by Ryu and Han (2010), which examines the influence of the quality of food, service, and physical environment on customer satisfaction and behavioral intentions in quick-casual restaurants, also leaves room for confirming the mediating role of satisfaction. Overall, there has been minimal examination of the mediating role of customer satisfaction between perceived restaurant attributes quality and repurchase intentions in the context of restaurants and even less investigation for solo diners. Hence, in order to identify whether the aforementioned relationship will also hold true for solo diners, the following hypotheses were developed:

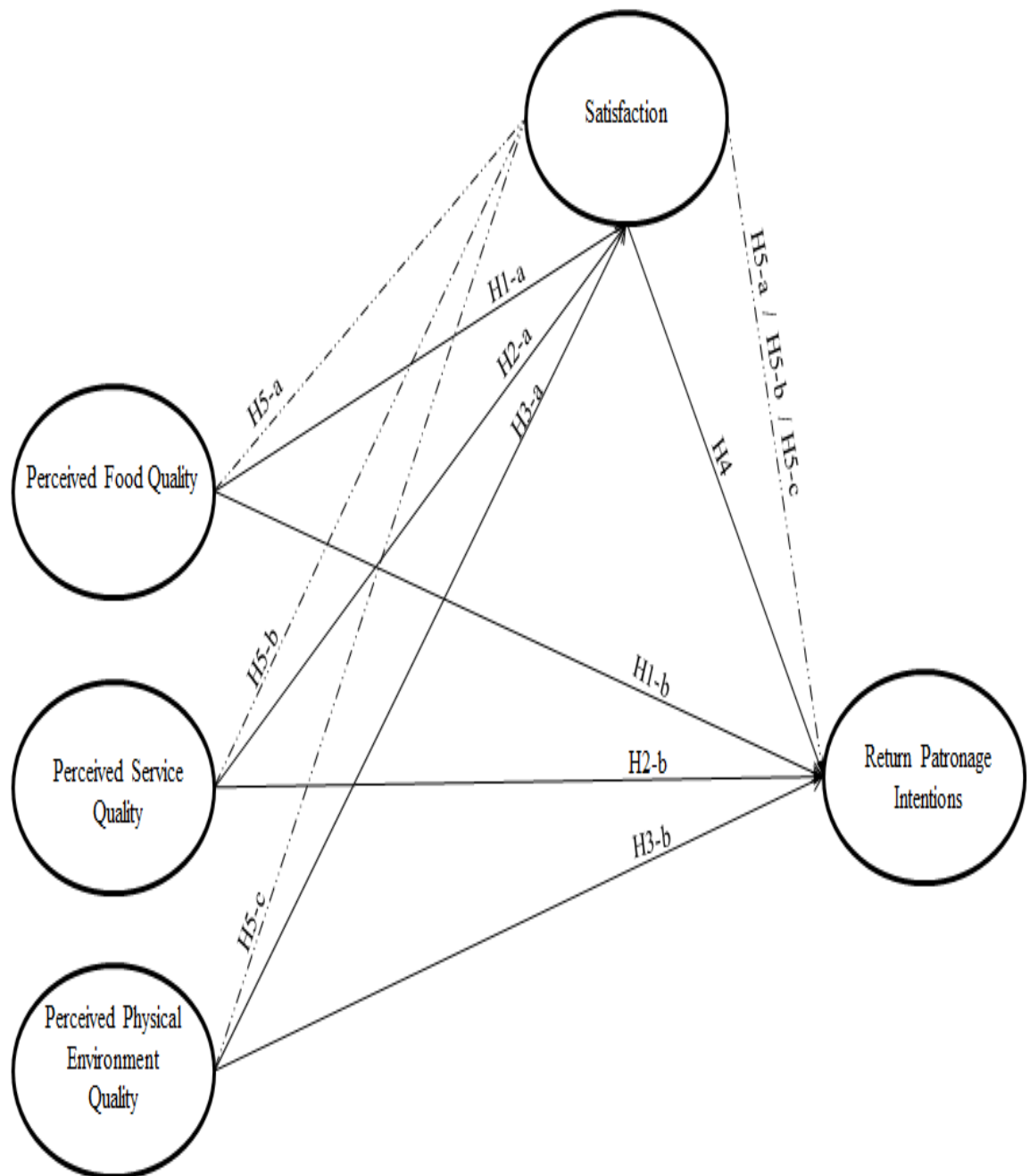
H5-a: Solo diners' satisfaction will mediate the relationship between perceived food quality and return patronage intentions.

H5-b: Solo diners' satisfaction will mediate the relationship between perceived service quality and return patronage intentions.

H5-c: Solo diners' satisfaction will mediate the relationship between perceived physical environment quality and return patronage intentions.

Proposed Study Model

Figure 1. Proposed Study Model



CHAPTER III

METHODS

Sampling

The target population of this study is solo diners in the United States.

Convenience sampling was used to recruit the sample pool for the study. According to Burns and Bush (2005), a confidence interval approach, where z indicates the standard error associated with a 95% level of confidence (1.96); p stands for the estimated variability in the population (in social science research 50% is widely used); $q=(1-p)$; and e is the acceptable error of $\pm 5\%$ confidence interval, was employed to determine the sample size n :

$$n = \frac{z^2 (pq)}{e^2} = \frac{1.96^2 (0.5)(1-0.5)}{0.05^2} = 385$$

Four hundred and sixty-two people were recruited via Amazon's Mechanical Turk, an online platform that facilitates the recruitment of survey participants. The participants were directed to the Qualtrics software, which enables users to conduct online surveys. The survey took approximately 7 minutes to complete, and \$0.50 was paid to each study participant

Research Design

In order to construct and refine the questionnaire, one focus group was conducted with the faculty and staff in the Department of Hotel and Restaurant Administration at Oklahoma State University. Faculty members and staff were considered appropriate for the focus group because of their tendency to be frequent solo diners due to their fast-paced work environment. A survey questionnaire adopted from previous studies was presented to the participants (Dubé et al., 1994; Gupta et al., 2007; Ryu et al., 2008; Ryu & Jang, 2007). The questionnaire was composed of three parts. In Part 1, questions about the participants' general solo dining experiences were presented. The frequency of their solo dining experiences and the times of day and days of week they dine alone were considered as well. Part 2 contained questions concerning proposed model variables. Before proceeding with the survey, participants were asked to recall their most recent solo dining experiences. A question asking the type of restaurant they went to was presented to help participants recall their experiences as well as to check what restaurant sector the study samples patron the most. Part 3 of the survey questionnaire included questions about participants' demographic information such as gender, age, marital status, number of people in the household, household income, education level, and ethnicity origin. After conducting the focus group, survey construct was refined for the actual data collection.

Survey Instrument

Questions to measure customers' perceptions of food quality were adopted from the studies by Dubé et al. (1994) and Gupta et al. (2007), including five questions on menu variety, food quality, portion, taste, and presentation. Service quality, including server's courtesy, appearance, promptness, and attentiveness, was measured by five items adopted from Gupta et al. (2007). Physical environment quality was measured by six items developed by Ryu and Jang (2007). Questions about dining equipment, layout, ambience, lighting, facility aesthetics, and aroma of the restaurant were included. Satisfaction measurement criteria were adopted from Ryu et al. (2008). Four items were used to measure the overall satisfaction with a solo dining experience. Return patronage intention was measured by three items developed by Ryu et al. (2008).

At the end of Part 2, an open-ended question asked the participants to describe restaurant attributes that would facilitate or inhibit their satisfaction and decision to revisit as a solo diner. The response items were anchored on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Part 3 of the survey questionnaire included questions about each participant's demographic information, such as gender, age, marital status, number of people in the household, household income, education level, and ethnic origin.

Data Analysis

Convergent and discriminant validity tests were done by using the correlation coefficients table to evaluate construct validity of the measurements. Later, exploratory factor analysis and reliability check of the independent and dependent variables were conducted before proceeding to the regression analyses. Principal component analysis extraction and varimax rotation were employed to check the dimensionalities of the study variables. Also, a Kaiser-Meyer-Olkin test was used to examine sampling adequacy for factor analysis. In order to confirm the degree of internal consistency among the multiple items, the coefficient alphas of each construct were calculated. The cut-off value of the Cronbach's alpha above 0.70 was used to confirm appropriate internal consistency of the constructs (Bernstein & Nunally, 1994).

A series of simple regression analyses were conducted to uncover the relationship between each independent variable (i.e., perceived quality of food, service, and physical environmental attributes), and the dependent variable of satisfaction. Also, the relationship among the three dimensions of perceived quality of restaurant attributes and return patronage intentions was identified via another series of regression analysis. Next, one more regression was employed to check the relationship between customer satisfaction and return patronage intentions. Finally, a series of multiple regression analyses were employed to check the relationship among perceived food, service, and physical environment quality and (1) satisfaction and (2) return patronage intentions

CHAPTER IV

RESULTS

Chapter IV presents the findings of the study. The first section explains the demographic profile and description of general solo dining experience of the sample. Second, the results of correlations, exploratory factor analysis, and reliability check of the independent and dependent variables are reported in an attempt to demonstrate construct validity. Last, the results of the hypotheses test are presented.

Demographic Description of the Sample

The sample of this study was solo diners in the United States. A total of 462 online survey questionnaires were collected via Amazon's Mechanical Turk. After excluding unusable answers resulted by missing data and unengaged responses, 352 questionnaires were used for the data analyses.

Among the 352 respondents, 47.2% of the respondents were females. The majority of the respondents were aged between 25 and 45 (44.3% of the respondents aged between 25–34 and 23.9% aged between 35–44). 61.7% of the respondents were single and 34.1% were married. The numbers of members in the household were relatively evenly distributed. A single-person household was most frequent, taking up 29.6% followed by four persons (25.6%), two persons (22.4%), and three persons (22.4%).

Annual household income ranged less than \$20,000 for 16.5% of the respondents, from \$20,000 to \$39,999 for 25.6% of the respondents, from \$40,000 to 59,999 for 24.4%, and more than \$60,000 per year for the 33.5%. Most of the respondents were four-year college/university graduates (40.9%). High school graduates and two-year college graduates took up 22.7% and 21.3% each. 14.8% had a graduate school degree. For the ethnic origins, Caucasians were the most prevalent ethnic group consisting of 75.6% of the respondents. Asians, African Americans, Hispanic, and Native Americans followed, consisting of 8.5%, 7.4%, 5.4%, and 0.9% of the respondents.

The sample of this study generally revealed to possess the major characteristics of solo diners. That is, the majority of respondents who have been solo diners were single and from single-person households (Little, 2014). Table 1 summarizes the demographic characteristics of the sample.

Table 1. Demographic Characteristics of the Sample ($N=352$)

Category	Frequency	Percentage (%)
Gender		
Male	166	47.2
Female	186	52.8
Age		
18–24	43	12.2
25–34	156	44.3
35–44	84	23.9
45–54	37	10.5
55–64	24	6.8
65 years or above	8	2.3
Marital status		
Single	217	61.7
Married	120	34.1
Other	15	4.3
Number of members in household		
1	104	29.6
2	79	22.4
3	79	22.4
More than 4	90	25.6

Table 1. Demographic Characteristics of the Sample (N=352) (*continued*)

Category	Frequency	Percentage (%)
Annual household income		
Less than \$20,000	58	16.2
\$20,000 to \$39,999	90	25.6
\$40,000 to \$59,999	86	24.4
\$60,000 to \$79,999	49	13.9
\$80,000 to \$99,999	29	8.2
\$100,000 or more	40	11.4
Education level		
Less than high school	1	0.3
High school	80	22.7
2-year college	75	21.3
4-year college/university	144	40.9
Graduate school	52	14.8
Ethnic origin		
Caucasian	266	75.6
Hispanic	19	5.4
African American	26	7.4
Native American	3	0.9
Asian	30	8.5
Other	4	1.1
Unidentified	4	1.1

Note. Percentage may not total to 100% due to missing values.

General Solo Dining Pattern of the Sample

The majority of respondents (83.8%) answered that they eat out 1~3 meals by themselves in a week, which corresponds with general eating out behavior in the United States. (Statista, 2013). 11.1% responded 4~6 times, 1.4% answered more than seven times. Lunch was the most frequent meal of the day eaten solo (69.3%) followed by dinner (18.8%) and breakfast (11.7%). The respondents answered that they eat out solo more on the weekdays (90.1%) than on weekends (9.4%).

Dining out widely takes place as part of social activity shared with one's family, friends, co-workers, and/or others rather than being by oneself. Especially, if dining out

takes place on weekends, chances are higher that it is accompanied by someone else. Thus, it was considered that the study results reflect on the general behavior of solo diners in terms of time of the week (Ferdman, 2015). In other words, solo diners were more likely to dine out on weekdays than on weekends, which confirmed the *a priori* assumption.

Overall, types of restaurant visited by the sample were evenly distributed. Fast-casual restaurant (38.7%) was the most visited type of restaurant segments followed by full-service restaurant (33%) and fast-food restaurant (28.2%). The sample of this study visited chain restaurants (65.3%) more than independent restaurants (34.4%). Walk-in (63.4%) and recommendation from others (23.3%) were the most frequent responses to how they heard about the restaurant.

Table 2. Description of General Solo Dining Pattern

Category	Frequency	Percentage (%)
Average number of meals eaten out solo		
0	12	3.4
1-3	295	83.8
4-6	39	11.1
More than 7	5	1.4
Most frequent meal of the day eaten out solo		
Breakfast	41	11.7
Lunch	244	69.3
Dinner	66	18.8
Period of time eaten out solo		
Weekdays	317	90.1
Weekends	33	9.4
Type of restaurant		
Fast-food restaurant	99	28.2
Fast-casual restaurant	136	38.7
Full-service restaurant	116	33.0

Table 2. Description of General Solo Dining Pattern (*continued*)

Category	Frequency	Percentage (%)
Type of restaurant ownership		
Chain restaurant	230	65.3
Independent restaurant	121	34.4
Type of advertisement		
Walk-in	223	63.4
Internet	17	4.8
Social media	4	1.1
Friend/relative	82	23.3
Newspaper	3	.9
Coupon book	1	.3
Other	22	6.3

Correlations and Reliability

Construct validity signifies the extent to which a measure logically represents the observed facets of phenomenon to a construct (McDaniel & Gates, 1993). Convergent validity and discriminant validity are a subtype of construct validity. Convergent validity indicates that theoretically similar measures should be highly correlated with each other while discriminant validity means the correlations between dissimilar measures should be low (Westen & Rosenthal, 2003). In order to demonstrate the construct validity, the correlation coefficients of the study variables were used.

The obtained correlation coefficients suggested that the variables met convergent and discriminant validity by showing the within-construct item correlation (A-C) were generally higher than the between-construct item correlations (E-G). In other words, items under food quality are highly correlated with each other, items pertain to service quality are highly correlated with one another, and the same principle applies to the items measuring physical environment quality. On the contrary, items associated with food quality were not highly related to either ones measuring service quality or items

measuring physical environment quality. Likewise, service quality measurements were not highly related to physical environment quality measurements. Table 3 presents the correlations coefficients among items measuring perceived quality of food, service, and physical environment attributes.

Table 3. Correlation Matrix of Variables (N=352)

Items	F1	F2	F3	F4	F5	S1	S2	S3	S4	S5	P1	P2	P3	P4	P5	P6
F1	1.00															
F2	.413	1.00														
F3	.329	.337	1.00													
F4	.344	.612	.435	1.00												
F5	.451	.615	.381	.581	1.00											
S1	.353	.302	.300	.323	.375	1.00										
S2	.394	.465	.363	.417	.490	.670	1.00									
S3	.222	.275	.266	.268	.245	.415	.499	1.00								
S4	.180	.296	.226	.423	.270	.433	.410	.544	1.00							
S5	.368	.407	.305	.312	.529	.470	.522	.293	.241	1.00						
G																
P1	.326	.494	.255	.377	.513	.286	.420	.243	.207	.438	1.00					
P2	.235	.309	.209	.345	.319	.282	.375	.437	.356	.310	.397	1.00				
P3	.154	.408	.159	.338	.314	.296	.416	.366	.321	.323	.335	.517	1.00			
P4	.200	.392	.195	.342	.355	.300	.427	.419	.307	.291	.421	.482	.660	1.00		
P5	.280	.403	.275	.373	.462	.242	.389	.276	.210	.390	.487	.311	.348	.426	1.00	
P6	.271	.391	.267	.509	.497	.314	.407	.302	.364	.403	.434	.296	.344	.372	.532	1.00

Note. F: food quality performance; S: service quality performance; P: physical environment performance

Exploratory factor analysis (EFA) using principal component analysis extraction and varimax rotation was conducted on 16 items of restaurant attributes to check the dimensionalities of the study variables. The Kaiser-Meyer-Olkin measure verified the acceptable sampling adequacy for the analysis, KMO=.90. A KMO near 1.0 supports a use of factor analysis while any value less than 0.5 is not appropriate for factor analysis (Hutcheson & Sofroniou, 1999). Three factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 57.88% of the variance. Tables 4 presents the factor loadings after rotation.

Table 4. Initial Results of Exploratory Factor Analysis for the Restaurant Attributes

Items	Factor loadings		
	Factor 1	Factor 2	Factor 3
There was a diverse menu	.63	-.08	.27
The food ingredients were fresh and good quality	.70	.31	.12
Food portion was big	.54	-.07	.33
Food was delicious	.65	.25	.22
Food was nicely presented	.80	.21	.13
The server greeted me cheerfully and friendly	.34	.04	.74
The server's appearance was neat and clean	.47	.23	.63
There were seats available as quickly as possible	.06	.39	.71
Food was served in a timely manner	.11	.28	.70
The server was attentive to my needs and checked back in with me often	.59	.16	.32
Dining equipment (e.g., tableware, linens, table setting, etc.) was of good quality	.61	.44	.00
Seat space was big enough	.16	.65	.32
Temperature was comfortable	.15	.79	.23
Lighting was comfortable	.20	.79	.20
Wall décor was appealing	.56	.47	-.02
Aroma was enticing	.56	.39	.14

One item (i.e., the server was attentive to my needs and checked back in with me often) from the suggested service attribute and three items from the physical environment attribute (i.e., dining equipment was of good quality, wall décor was appealing, aroma was enticing) were loaded on the food attribute factor. In consideration of logic and face validity, the items were transferred to each service quality factor and physical environment dimensions, respectively. However, the item “Aroma was enticing” was transferred to the food quality factor considering the fact that the general aroma of a restaurant is mostly affected by the aroma of the food the restaurant offers. Later, each indicator in food quality, service quality, and physical environment quality was averaged to yield three independent variables. Table 5 presents the final result of exploratory factor analysis for the three restaurant attributes.

Table 5. Final Results of Exploratory Factor Analysis for the Restaurant Attributes

Factors/Items	Factor loadings	Eigen value	Variance (%)	Cronbach's alpha
Factor 1: Food Quality		6.54	40.90%	.80
There was a diverse menu.	0.63			
The food ingredients were fresh and good quality.	0.70			
Food portion was big.	0.54			
Food was delicious	0.65			
Food was nicely presented.	0.80			
Aroma was enticing.	0.56			
Factor 2: Service Quality		1.47	9.16%	.79
The server greeted me cheerfully and friendly.	0.74			

Table 5. Final Results of Exploratory Factor Analysis for the Restaurant Attributes
(continued)

Factors/Items	Factor loadings	Eigen value	Variance (%)	Cronbach's alpha
The server's appearance was neat and clean.	0.63			
There were seats available as quickly as possible.	0.71			
Food was served in a timely manner.	0.70			
The server was attentive to my needs and checked back in with me often.	0.59			
Factor 3: Physical Environment Quality		1.25	7.83%	.81
Dining equipment (e.g., tableware, linens, table setting, etc.) was of good quality.	0.61			
Seat space was big enough.	0.65			
Temperature was comfortable.	0.79			
Lighting was comfortable.	0.79			
Wall décor was appealing.	0.56			

Items that assumed to measure satisfaction and return patronage intentions separately were aggregated into one factor in the current study. Previous studies show that satisfaction and repurchase display strong relationships (Anderson & Sullivan, 1993; Davidow, 2003; Deslande, 2003; Fang, Shih, & Liu, 2005; Kumar, 2002; Mittal & Kamakura, 2001; Preis, 2003; Taylor & Hunter, 2002; Turel & Serenko, 2004). In the aforementioned studies, the correlations between satisfaction and return patronage intentions were all above .45, and a meta study conducted by Curtis, Arbratt, Rhoades, and Dion (2011) analyzed the correlation between repurchase intentions and satisfaction showed the significant and strong mean correlation of 0.63 for the two constructs. The finding of significance at the 95% confidence level indicated that satisfaction can be a strong indicator of return patronage. A high score of Cronbach's alpha (.94) also

supported that there could be a possibility that satisfaction and return patronage intentions can be combined together.

However, satisfaction and repurchase intentions still have been treated separately in most literature, satisfaction being a predecessor and reliable predictor of repurchase intentions (Bitner, 1990; LaBarbera & Mazursky, 1983; Patterson, 1995). The current study treated satisfaction and return patronage intentions as two different factors for further analysis to comply with the previous literature, although the two constructs were highly correlated and loaded as one factor. The results of EFA are presented in the tables below.

Table 6. Results of Exploratory Factor Analysis for Satisfaction and Return Patronage Intentions

Factors/Items	Factor loadings	Eigen value	Variance (%)	Cronbach's alpha
Factor 4: Satisfaction & Return Patronage Intentions		5.10	72.75%	.94
I was pleased to dine in at the restaurant	0.87			
The overall feeling I got from the restaurant was satisfied.	0.86			
The overall feeling I got from the restaurant put me in a good mood.	0.85			
I really enjoyed myself at the restaurant.	0.85			
I would like to come back to the restaurant in the future.	0.86			
I would recommend the restaurant to my friends or others.	0.87			
I would more frequently visit the restaurant.	0.80			

Reliability analysis was used to check the internal consistency of each factor dimension of food quality, service quality, physical environment quality, satisfaction, and return patronage intention. Cronbach's alphas were all above a cut-off of .70. These alpha coefficients, which supported aggregation of the items in each factor, can be used for the subsequent analysis (Nunnally, 1978). The results of the reliability analysis along with the mean and standard deviation of items are summarized in Table 7.

Table 7. Factor Scale Reliability

Factor	Item	Mean	SD	Alpha
Food Quality	There was a diverse menu.	3.61	.912	.80
	The food ingredients were fresh and good quality.	4.03	.872	
	Food portion was big.	3.86	.907	
	Food was delicious.	4.18	.758	
	Aroma was enticing.	4.01	.842	
Service Quality	The server greeted me cheerfully and friendly.	4.04	.796	.79
	The server's appearance was neat and clean.	4.14	.742	
	There were seats available as quickly as possible.	4.25	.692	
	Food was served in a timely manner.	4.27	.685	
	The server was attentive to my needs and checked back in with me often.	3.67	1.073	
Physical Environment Quality	Dining equipment (e.g., tableware, linens, table setting, etc.) was of good quality.	3.79	.842	.81
	Seat space was big enough.	4.21	.696	
	Temperature was comfortable.	4.11	.742	
	Lighting was comfortable.	4.19	.683	
	Wall décor was appealing.	3.80	.903	
Satisfaction	I was pleased to dine in at the restaurant.	4.19	.659	.91
	The overall feeling I got from the restaurant was satisfied.	4.22	.678	

Table 7. Factor Scale Reliability (*continued*)

Factor	Item	Mean	SD	Alpha
Satisfaction	The overall feeling I got from the restaurant put me in a good mood.	4.10	.752	
	I really enjoyed myself at the restaurant.	4.07	.776	
Return Patronage Intentions	I would like to come back to the restaurant in the future.	4.33	.700	.876
	I would recommend the restaurant to my friends or others.	4.22	.806	
	I would more frequently visit the restaurant.	4.01	.891	

Hypothesis Testing

Six linear regressions were run to assess the effect of perceived food quality, service quality, and physical environment quality performance on satisfaction and return patronage intentions, respectively. The items in each factor were averaged for the analyses.

Perceived food quality, service quality, and physical environment quality performance all had positive influence on the level of satisfaction, supporting the study hypotheses (H1-a, H2-a, and H3-a).

A simple linear regression was calculated to predict solo diners' satisfaction based on their perceived quality of food attributes. As predicted in hypothesis 1-a, a significant result in regression equation was found ($F(1,350)=317.14, p<.000$), with an R^2 of .48. In other words, perceived food quality was significantly and positively associated with satisfaction and explained 48% of variance in customers' satisfaction.

Perceived service quality also significantly and positively affected customers' satisfaction with ($F(1,350)=355.22, p<.000$), with an R^2 of .50, supporting hypothesis 2-a. The variable explained 50% of the variance in customer satisfaction.

Finally, perceived quality of physical environment attributes was found to have a significant and positive effect on customer satisfaction. Regression equation was found ($F(1,350)=292.33, p<.000$), with an R^2 of .46. Thus, 46% of variance in customer satisfaction was explained by perceived physical environment quality. Hence, hypothesis 3-a was supported. Table 8 summarizes the findings of regression analyses.

Table 8. Results of Simple Regression: Effect of Perceived Quality of Restaurant Attributes on Satisfaction

Independent variables	R	R^2	F	B	Beta	t	Sig.
Food quality	.69	.48	317.14	.67	.69	17.81	.000
Service quality	.71	.50	355.22	.76	.71	18.85	.000
Physical environment quality	.68	.46	292.33	.76	.68	17.10	.000

The results of regression testing the influence of food quality, service quality, and physical environment quality performance on customers' return patronage intentions showed that all three qualities of restaurant attributes factors had a significant positive

impact on predicting return patronage intention. Thus, hypotheses were supported (H1-b, H2-b, H3-b).

First, perceived food quality significantly and positively influenced solo diners' return patronage intentions. A simple regression equation predicted customers' return intentions with ($F(1,350)=279.48, p<.000$) and an R^2 of .44. Thus, 44% of variance in return patronage intentions was explained by perceived food quality.

Likewise, perceived service quality significantly and positively predicted customers' return patronage intentions with ($F(1,350)=188.35, p<.000$). Perceived service quality explained 36% of the variance in return patronage intentions.

Lastly, return patronage intentions were predicted by perceived physical environment quality. The relationship between the two variables was positive and significant with ($F(1,350)=192.38, p<.000$). Physical environment quality explained 36% of the variance in return patronage intentions. Table 9 presents the results of the regression analyses.

Table 9. Results of Simple Regression: Effect of Perceived Quality of Restaurant Attributes on Return Patronage Intentions

Independent variables	R	R ²	F	B	Beta	t	Sig.
Food quality	.67	.44	279.48	.73	.67	16.72	.000
Service quality	.60	.36	188.35	.71	.60	13.72	.000
Physical environment quality	.60	.36	192.38	.76	.60	13.87	.000

One more simple regression was performed to confirm that customer satisfaction had a significant positive effect on return patronage intentions. The result (summarized in Table 10) shows that 67% of the variance in return patronage intentions was predicted by customer satisfaction ($F(1,350)=700.79, p<.000$).

Table 10. Results of Simple Regression: Effect of Satisfaction on Return Patronage Intentions

Independent variable	R	R ²	F	B	Beta	t	Sig.
Satisfaction	.82	.67	700.79	.92	.82	26.47	.000

Finally, in order to identify which independent variable (i.e. food quality, service quality, and physical environment quality) had more explanatory power in inducing solo diners' satisfaction and return patronage intentions, two more multiple regression analyses were conducted in addition to the simple regressions presented above. In other words, the individual variables (food quality, service quality, and physical environment quality) were entered in to the model simultaneously with the dependent variables: (1) satisfaction and (2) return patronage intentions. The mean value of each variable was used for the analyses.

The findings demonstrate that perceived quality of food, service, and physical environment were significantly related to satisfaction with ($F(3,348)=207.906, p<.000$). More specifically, based on the magnitude of the beta values, perceived service quality emerged as the most important contributor to satisfaction.

With regards to estimating the relative importance of restaurant attributes on behavioral intentions, the results indicated that perceived food, service, and physical environment quality significantly and positively affected solo diners' return patronage intentions ($F(3,348)=126.187, p<.000$), and perceived food quality was found to be the most influential variable that led to solo diners' return patronage intentions with the highest standardized coefficient.

Table 11. Results of Multiple Regression (Dependent Variable: Satisfaction)

Independent variables	B	Beta	t
(Constant)	.25		1.54
Perceived food quality	.30	.31	7.09***
Perceived service quality	.38	.36	8.12***
Perceived physical environment quality	.29	.26	5.72***

Note. $R^2=.642$; $F=207.906$; $*p<.05$, $**p<.01$, $***p<.001$

Table 12. Results of Multiple Regression (Dependent Variable: Return Patronage Intentions)

Independent variables	B	Beta	t
(Constant)	.33		1.59
Perceived food quality	.45	.41	8.00***
Perceived service quality	.26	.21	4.13***
Perceived physical environment quality	.27	.21	4.07***

Note. $R^2=.521$; $F=126.187$; $*p<.05$, $**p<.01$, $***p<.001$

The mediating role of satisfaction on the relationship between perceived restaurant attribute quality and return patronage intentions was tested by using the methods proposed by Baron and Kenny (1986). The mediation models test four conditions to confirm a mediating role of a variable; the regression parameter between (1) an independent variable and a dependent variable; (2) an independent variable and a mediating variable; (3) a mediating variable and a dependent variable must be significant; and (4) the independent variable must predict the dependent variable less strongly if a mediator is included.

The required conditions of (1) through (3) were met, and the VIF values for variables ranged from 2.00 to 4.20. Because the values did not reach the threshold of 5, the variables were free from multicollinearity issues. Tolerance values were between .24 and .50, which were greater than the problematic level of .10. The assumptions of

multiple regression were confirmed, and, consequently, a series of multiple regressions were run to test step (4). Perceived food quality, service quality, physical environment quality performance, and satisfaction variables accounted for approximately 69% of the total variance in return patronage intentions ($p < .001$).

Satisfaction partially mediated the relationship between perceived food quality performance and return patronage intention. That is, although it was statistically significant, the influence of perceived food quality performance on return patronage intentions was less significant when satisfaction was included in the model.

However, satisfaction acted as a full mediator between perceived service quality /perceived physical environment quality and return patronage intentions. Table 13 summarizes the results of mediating effects of satisfaction on the relationships among the independent variables (perceived food quality/service quality/physical environment quality) and the dependent variable (return patronage intentions).

Table 13. Results of Mediating Effects of Satisfaction Between the Independent Variables and the Dependent Variable

Relationship	Direct Path	Indirect Path	Result
Perceived food quality → Satisfaction → Return patronage intentions	.67***	.20***	Partial mediation
Perceived service quality → Satisfaction → Return patronage intentions	.59***	.02	Full mediation
Perceived environment quality → Satisfaction → Return patronage intentions	.60***	.08	Full mediation

Note. Numbers are standardized coefficients. * $p < .05$, ** $p < .01$, *** $p < .001$

CHAPTER V

CONCLUSION

Customer satisfaction has been an all-time concern in the hospitality industry, mainly because fulfilled customer satisfaction acts as an assurance to retain customers and make the customers loyal to the business. Another reason why a lot of management strives to satisfy customers is that disgruntled customers are more likely to spread negative feedback in person or online (Babin & Griffin, 1998; Bagozzi & Moore, 1994; Bolton & Drew, 1994; Yuksel & Remington, 1998). However, there is a scarcity in the literature that examined customer satisfaction based on customer segments, specifically a segment of solo diner customers.

Solo diners have become a crucial segment in the hospitality industry, as more people have started travelling or eating out by themselves as a result of the surge of one-person households and an increase in the trend toward single life. However, not many aspects regarding the behavior of solo diners have been identified in the hospitality literature. This study contributes to the existing literature by assessing the dynamics among perceived qualities of restaurant attributes, solo diners' satisfaction, and the consequent return patronage intention in the restaurant context.

The results showed that perceived quality of restaurant attributes including food, service, and physical environment had significantly and positively affected the level of customer satisfaction and return patronage intentions. This is consistent with the findings of previous research on the topic, yet extends the scope of the subject of the study to the solo diners (Bitner & Hubbert, 1994; Bolton & Drew, 1994; Oh & Parks, 1997; Zeithaml et al., 1996).

As much as non-solo customers are concerned with the performance of food, service, and physical environment quality of a restaurant, solo diners displayed similar patterns in their dining experience. To put it another way, it is suggested that, regardless of the size of a dining party, customers expect high standards of restaurant attributes' quality and do not want to compromise any aspects of quality due to their presumably less welcomed status as a solo customer.

Another finding of this study is that solo diners' satisfaction relates to return patronage intentions. Customers who had a more satisfying experience were more likely to return to the restaurant. Hence, the finding implies that high levels of customer satisfaction needs to be assured for long-term prosperity of an establishment.

More importantly, the study tested the mediating role of customer satisfaction between perceived performance of restaurant attributes and return patronage intention. First, satisfaction was found to be a partial mediator between perceived food attributes' performance and return patronage intention. Such result implies that food attributes are considered the most critical factor when customers decide to return to a restaurant for another meal. In other words, even if one is not entirely satisfied with the overall experience in a certain restaurant, if the food is appealing enough in terms of taste,

presentation, portion size, quality, and menu options, the customer may return to the restaurant in the future.

Second, in the relationship between perceived service attributes' performance and return patronage intentions, satisfaction acted as a full mediator. That is, in order to ensure a return to a restaurant, it is necessary that a customer perceives that the performance of the service attributes is of high quality and is satisfied with the overall dining experience.

Last, it is found that satisfaction fully mediates the relationship between perceived performance of physical environment attributes and the return patronage intentions. In a similar manner, the role of satisfaction is a must in leading a customer to another visit to a restaurant. In other words, the customer must find that the performance of physical environment attribute is of good quality and must be satisfied with the experience in the dining establishment.

Although the importance of customer satisfaction, in the context of perceived quality of restaurant attributes and return patronage intentions, has been widely recognized, there is a paucity of studies examining the mediating role of satisfaction (Bansal & Taylor, 1997; Cronin & Taylor, 1992; Dabholkar, Shepherd, & Thorpe, 2000; Qin & Prybutok, 2009). To illustrate, the mediating role of satisfaction has not been either tested in the attributes level, or the result of the test produced different results; either being no mediation effect or a mediation effect.

The current study was one of the few that addressed the gap described above in the hospitality research. It provided new theoretical evidence about the interrelationship among the quality of restaurant attributes, satisfaction, and return patronage intentions, as

well as the mediation effect of satisfaction added to an additional understanding of crucial restaurant attributes that have an impact on return patronage intention. The results of hypotheses testing are summarized in Table 14.

Table 14. Hypotheses Test Results

Hypothesis	Result
H1-a: Perceived food quality will positively affect solo diners' satisfaction.	Supported
H1-b: Perceived food quality will positively affect solo diners' return patronage intentions.	Supported
H2-a: Perceived service quality will positively affect solo diners' satisfaction.	Supported
H2-b: Perceived service quality will positively affect solo diners' return patronage intentions.	Supported
H3-a: Perceived physical environment quality will positively affect solo diners' satisfaction.	Supported
H3-b: Perceived physical environment quality will positively affect solo diners' return patronage intentions.	Supported
H4: Solo diners' satisfaction will positively affect their return patronage intentions.	Supported
H5-a: Solo diners' satisfaction will mediate the relationship between perceived food quality performance and return patronage intentions.	Supported
H5-b: Solo diners' satisfaction will mediate the relationship between perceived service quality performance and return patronage intentions.	Supported
H5-c: Solo diners' satisfaction will mediate the relationship between perceived physical environment quality performance and return performance and return patronage intentions.	Supported

Managerial Implication

The contribution of the current study resides in what restaurant managers can do with knowledge about what attributes solo diners find important and how the factors directly affect customer satisfaction and indirectly influence solo diners' return patronage intention. The findings of the study indicated that certain restaurant attributes were more significant than others in improving customers' perceptions of overall satisfaction and their return patronage intentions. The results can be used as a guide for restaurateurs to determine how to allocate their business resources to cater to the solo customers.

For instance, among the restaurant attributes that induce return patronage, the most significant factor was food, which means that a restaurant needs to perform well in terms of food quality in order to maintain its primary purpose for being in business (Peters & Waterman, 1982). Especially, it appeared that fresh food ingredients and good food quality delicious food, along with the presentation of food, were the factors solo diners seek most. As far as food is concerned, solo diners did not exhibit particularly different preferences. Thus, managers in the restaurant businesses should bear in mind that the food should be kept at its best quality.

Another managerial point, practitioners should keep in mind that service attributes play a significant role in inducing solo customers' satisfaction. Specifically, servers' neat and clean appearance, attentiveness, and timely service were found to act as facilitators for solo customers to be satisfied and return. Employee training can be achieved without a considerable amount of financial investment. Managers are recommended to set a standard to keep their crews looking clean and tidy. Motivating employees to pay attention to solo customers requires an effort but brings back big results, specifically as a

return to the restaurant, recommendation to friends, and becoming loyal to the establishment. When asked what inhibits or facilitates a return to a restaurant, solo diners mentioned that servers who are keen to customers' needs can be helpful; for example, no need to ask for drink refills or a check. Also, because one of the common reasons solo diners eat out on their own is that they do not have time to cook for themselves or to go too far just to eat, so a timely served meal, presented check, or other dining-related service can be beneficial for a restaurant to retain solo diners.

Among the physical environment attributes, noticeable factors that affect solo diners' satisfaction and revisit intentions were good quality of dining equipment, general atmosphere such as wall décor in the restaurant, and enough seating space. For people who dine alone, the experience of dining on their own is not necessarily involuntary, rather they intentionally choose to dine by themselves for the enjoyment of solitude or as a reward for themselves. Thus, well maintained or high quality dining equipment such as tableware, lines, table setting, etc. are factors management should care about. In the same vein, providing different types of seating types can favor solo diners. Some solo diners tend to prefer booths as opposed to tables because they may want to protect their privacy. However, other solo diners want to meet new people or communicate with service staff; thus, in this case; communal tables or bar seating types can work better to serve the needs of solo diners.

Limitations and Recommendations for Future Research

The current study reinforced the understanding of factors that are critical in determining solo diners' satisfaction and return behavioral intentions. However, there are several limitations to be recognized and addressed in future studies. First of all, the issue of construct validity should be given more rigorous attention. The results of the exploratory factor analysis produced different factor dimensions than what was expected to be based on the literature review. Some items that were assumed to be a service attribute and physical environment attributes were loaded on the food attribute factor. Also, satisfaction and return intention were highly correlated. Although there is supporting evidence that problematic items can be transferred to another factor (Fabrigar, Wegener, MacCallum, & Strahan, 1999), and there is a possibility that satisfaction and return patronage intention can be aggregated to one factor due to their high correlations (Anderson & Sullivan, 1993; Davidow, 2003; Deslande, 2003; Fang, Shih, & Liu, 2005; Kumar, 2002; Mittal & Kamakura, 2001; Preis, 2003; Taylor & Hunter, 2002; Turel & Serenko, 2004), future studies may reduce the likelihood of having less clear factor dimensions by employing different analysis techniques.

Second, the geographical coverage of the study can be extended outside of the United States. The sample of this study was solo diners who reside in U.S. territory. Thus, the generalizability of the results is limited. Given the increase of the number of solo diners across the globe, more studies are expected to investigate the impacts of restaurant attributes on solo diners' satisfaction and return patronage intention. Different direction and magnitude of the relationships among study variables may be produced. In addition,

conducting the research in different culture settings may enable us to test the validity of the study model.

Third, other factors that may influence solo diners' satisfaction and return intention can be included as study variables in future studies. For example, it may be possible to assess the influence of price, safety, and sense of belongingness to a restaurant on customer satisfaction and revisit intentions and examine whether the variables work as a mediator or a moderator among the constructs.

Last, the statistical analysis used in this study is not the best method of investigating the relationship among study variables. Structural equation modeling can be a strong alternative. Also, it is possible to include the analysis of variance (ANOVA) for future research in order to investigate the differences in responses among different demographic groups of solo diners. The emphasis of the current study was more on the study hypotheses testing. However, ANOVA will provide additional insights, for instance, by determining whether differences in gender, age, marital status, number of people in the household, household income, education level, and ethnic origin of study participants have an effect on the level of perceived quality of restaurant attributes, satisfaction, and return patronage intentions.

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APPENDICES

APPENDIX A.

SURVEY QUESTIONNAIRE

Do you dine alone? If YES, please continue with the survey. If NO, please stop the survey. Thank you for your time.

Part 1: General solo dining experience

- Approximately how many meals do you eat **out** *by yourself* in a week?
☐ 0 ☐ 1~3 ☐ 4~6 ☐ More than 7
- Which main meal of the day do you eat **out** most often *by yourself*?
☐ Breakfast ☐ Lunch ☐ Dinner
- Which days do you eat **out** more often *by yourself*?
☐ Weekdays ☐ Weekends
- Please provide the name of restaurant where you dined alone solo most recently. If
you do not remember the name of the restaurant, you can skip this question.
()

Part 2: Your most recent solo dining experience

Please recall a restaurant where you dined alone most recently and answer the following questions.

5. What was the type of restaurant?

- ☐ Fast-food restaurant

(e.g., where patrons pay for quick-service food products before eating. This industry excludes coffee and snack shops. Most industry establishments also sell beverages, such as water, juice and sodas, but usually not alcohol. Examples include McDonald's, Subway, Wendy's, etc.).

- Fast-casual restaurant

(e.g., fast-casual restaurants fall between fast-food and full-service, where you can find fresh, less processed food (as opposed to food that is fried, high in saturated fat, cholesterol and sodium) at an average price of \$7.40. Examples of fast-casual

restaurants include Boston Market, Panera Bread, Souplantation and Sweet Tomatoes, Chipotle, Au Bon Pain, Baja Fresh Mexican Grill, etc.).

☐ Full-service restaurant

(e.g., this industry includes single-location, independent or family-operated restaurants that provide food services to patrons who order and are served while seated and pay after eating. These establishments may sell alcoholic and other beverages, in addition to providing food services to guests).

6. The restaurant was a(n)

☐ Chain restaurant

☐ Independent restaurant

7. How did you hear about the restaurant?

☐ Walk-in

☐ Internet

☐ Social Media

☐ Friend/Relative

☐ Newspaper

☐ Coupon Book

☐ Other (Please state)

8. The following questions are intended to measure your perceptions of food quality in the restaurant you answered in question 4. Please choose one number that best reflects your opinion.

	Strongly Disagree				Strongly Agree
There was a diverse menu	1	2	3	4	5
The food ingredients were fresh and good quality	1	2	3	4	5
Food portion was big	1	2	3	4	5
Food was delicious	1	2	3	4	5
Food was nicely presented	1	2	3	4	5

9. The following questions are intended to measure your perceptions of service quality in the restaurant you answered in question 4. Please choose one number that best reflects your opinion.

	Strongly Disagree				Strongly Agree
The server greeted me cheerfully and friendly	1	2	3	4	5
The server's appearance was neat and clean	1	2	3	4	5
There were seats available as quickly as possible	1	2	3	4	5
Food was served in a timely manner	1	2	3	4	5
The server was attentive to my needs and checked back in with me often	1	2	3	4	5

10. The following questions are intended to measure your perceptions of physical environment quality in the restaurant you answered in question 4. Please choose one number that best reflects your opinion.

	Strongly Disagree				Strongly Agree
Dining equipment (e.g., tableware, linens, table setting, etc.) was of good-quality	1	2	3	4	5
Seat space was big enough	1	2	3	4	5
Temperature was comfortable	1	2	3	4	5
Lighting was comfortable	1	2	3	4	5
Wall décor was appealing	1	2	3	4	5
Aroma was enticing	1	2	3	4	5

11. The following questions are intended to measure your satisfaction in the restaurant you answered in question 4. Please choose one number that best reflects your opinion.

	Strongly Disagree				Strongly Agree
I would like to come back to the restaurant in the future	1	2	3	4	5
I would recommend the restaurant to my friends or others	1	2	3	4	5
I would more frequently visit the restaurant	1	2	3	4	5

12. The following questions are intended to measure your return patronage intentions to the restaurant you answered in question 4. Please choose one number that best reflects your opinion.

	Strongly Disagree				Strongly Agree
I was pleased to dine-in at the restaurant	1	2	3	4	5
The overall feeling I got from the restaurant was satisfied	1	2	3	4	5
The overall feeling I got from the restaurant put me in a good mood	1	2	3	4	5
I really enjoyed myself at the restaurant	1	2	3	4	5

13. What do you think are factors that would facilitate or inhibit your decision **to revisit** a restaurant when you **dine-out solo**? Please share your opinion up to 100 words.

Part 3: Information about yourself

14. What is your gender?

☐ Male ☐ Female

15. What age group are you in?

☐ 18-24 ☐ 25-34 ☐ 35-44 ☐ 45-54 ☐ 55-64 ☐ 65 years or above

16. What is your marital status?

☐ Single ☐ Married ☐ Other (please specify) _____

17. How many members are there in your household?

☐ 1 ☐ 2 ☐ 3 ☐ More than 4

18. What is the range of your annual household income?

☐ Less than \$20,000 ☐ \$20,000 to \$39,999 ☐ \$40,000 to \$59,999

☐ \$60,000 to \$79,999 ☐ \$80,000 to \$99,999 ☐ \$100,000 or more

19. What is the highest level of education you have completed?

☐ Less than high school ☐ High school ☐ 2-year college

☐ 4-year college/university ☐ Graduate school

20. What is your ethnic origin?

☐ Caucasian ☐ Hispanic ☐ African American ☐ Native American

☐ Asian ☐ Other (please specify) _____ ☐ I would rather not answer

21. What is your home zip code?

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Thank you very much for your participation!

APPENDIX B.

OKLAHOMA STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL

Oklahoma State University Institutional Review Board

Date: Friday, November 20, 2015
IRB Application No HE1567
Proposal Title: Effects of performance of restaurant attributes on solo diners' satisfaction and return patronage intention
Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 11/19/2018

Principal Investigator(s):

Sohyun Bae	Lisa Slevitch
1822 N Perkins Rd Apt 1221	222 HES
Stillwater, OK 74075	Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,



Hugh Crethar, Chair
Institutional Review Board

VITA

SOHYUN BAE

Candidate for the Degree of

Master of Science

Thesis: WOULD SOLO DINERS BE DIFFERENT? THE RELATIONSHIP AMONG
PERCEIVED QUALITY OF RESTAURANT ATTRIBUTES,
SATISFACTION, AND RETURN PATRONAGE INTENTIONS

Major Field: Hospitality Administration

Biographical:

Education:

Completed the requirements for the Master of Science in Hospitality
Administration at Oklahoma State University, Stillwater, Oklahoma in May
2016.

Completed the requirements for the Bachelor of Arts in Culture and Tourism at
Sookmyung Women's University, Seoul, Republic of Korea in February 2012.

Experience:

Graduate Assistant, School of Hotel and Restaurant Administration, Oklahoma
State University (September 2014- May 2016)